

ABSTRACT

An object of the present invention is to provide a honeycomb filter for purifying exhaust gases which makes it possible to alleviate a thermal stress generated due to occurrence of a local temperature change and which is less likely to generate cracks and superior in strength and durability, an adhesive that has a low thermal capacity and is capable of alleviating the thermal stress, a coating material that has a low thermal capacity with a superior heat insulating property and is capable of alleviating the thermal stress, and a manufacturing method of the honeycomb filter for purifying exhaust gases that can improve precision in the outside dimension, and reduce damages in the manufacturing processes.

The present invention relates to a honeycomb filter for purifying exhaust gases, having a structure in that a plurality of column-shaped porous ceramic members, each having a number of through holes that are placed side by side in the length direction with partition wall interposed therebetween, are combined with one another through adhesive layers so that the partition wall that separate the through holes are allowed to function as a filter for collecting particulates, and in this structure, the thermal expansion coefficient α_L of the adhesive layer and the thermal expansion coefficient α_F of the porous ceramic member are designed to have the following relationship:

$$0.01 < |\alpha_L - \alpha_F| / \alpha_F < 1.0.$$